

In the Claims

1-5. (Canceled)

6. (Previously Presented) An interactive video consumer system employing a layered architecture comprising at least three layers, a lowest layer of the architecture being customized to particular hardware being used, and higher layers being progressively more independent of the hardware so as to offer hardware-independent interfaces for interacting with the system, the architecture including at least a physical layer and an application layer, such system providing enhanced consumer experience through computer data associated with video content, wherein a watermark decoder for decoding computer data from in-band video content is included in said physical layer, or in an intervening higher layer, but not so high as to be included in said application layer.

7. (Previously Presented) The system of claim 6 wherein said watermark decoder is provided in said physical layer.

8. (Previously Presented) The system of claim 6 wherein said watermark decoder is provided in a link layer.

9. (Previously Presented) The system of claim 6 in which the interactive video consumer system also includes a decoder for obtaining computer data transmitted with the video by multicast IP transmission.

10-11. (Canceled)

12. (New) A system comprising:

first and second consumer electronic apparatuses, each of said apparatuses including an input for receiving content information, each of said consumer electronic apparatuses implementing a layered architecture comprising at least four logical layers, the higher layers being progressively more independent of the hardware so as to offer

hardware-independent interfaces for interacting with the apparatus, said first and second apparatuses comprising different hardware designs that are masked through use of said layered architectures;

the first apparatus including a first watermark decoder for decoding plural-bit watermark data steganographically embedded "in band" within content represented by the received content information, the first watermark decoder being located in a particular logical layer of the layered architecture of said first apparatus, and operative to relay decoded watermark data to a higher logical layer within said architecture to control an aspect of first apparatus operation;

the second apparatus including a second watermark decoder for decoding plural-bit watermark data steganographically embedded "in band" within content represented by the received content information, the second watermark decoder being located in a particular logical layer of a layered architecture of said second apparatus, and operative to relay decoded watermark data to a higher logical layer within said architecture to control an aspect of second apparatus operation;

wherein said first and second watermark decoders are of different design, yet said differences are masked by the layered architectures within said consumer electronic apparatuses, so that said higher logical layers are independent of the design of the watermark decoders.

13. (New) The system of claim 12 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within audio content.

14. (New) The system of claim 12 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within still image content.

15. (New) The system of claim 12 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within video content.

16. (New) The method of claim 12 in which said higher logical layer in the first apparatus is responsive to said relayed watermark data to present additional content to a user of said first apparatus.

17. (New) A consumer electronic apparatus having a layered architecture including several logical layers, including a hardware layer and plural higher layers that are progressively more independent of hardware, the apparatus being further characterized by:

an input for receiving content data from the internet, and also including a memory and an output device;

a watermark decoder in said hardware layer, operative to decode plural-bit watermark data steganographically embedded "in band" within said received content data, and to provide the decoded watermark data to a higher layer in said architecture;

processing circuitry responsive to instructions stored in said memory, said processing circuitry thereby being operative to:

execute a web browser;

utilize said web browser, in accordance with watermark data decoded by said watermark decoder, to obtain auxiliary content; and

render content for output using said output device, said rendered content including both said content data received from the internet, and auxiliary content obtained through use of said watermark data.

18. (New) The apparatus of claim 17 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within audio content.

19. (New) The apparatus of claim 17 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within still image content.

20. (New) The apparatus of claim 17 in which the first watermark decoder is operative to decode plural-bit watermark data steganographically embedded within video content.

21. (New) A portable apparatus having a processor, memory, a wireless interface, one or more input devices including a 2D optical sensor, and one or more output devices including a display screen, the apparatus operative to make phone calls, send email, and display received video data, the apparatus characterized by a watermark decoder operative to decode plural-bit watermark data steganographically embedded "in band" within digital content data processed by said apparatus, the apparatus further comprising software instructions in said memory causing said processor to define a layered stack of protocols, a lower layer of which is operative to communicate with said watermark decoder and relay decoded plural-bit watermark data to a higher layer, wherein said higher layer is operative to employ said decoded watermark data in connection with an application selected by a user.

22. (New) The apparatus of claim 21 wherein said higher layer is operative to render content to a user, the rendered content including the digital content from which the watermark was decoded, and auxiliary content obtained by reference to said decoded watermark data.

23. (New) The apparatus of claim 21 in which the watermark decoder is operative to decode watermark data from image data captured from the 2D optical sensor.

24. (New) The apparatus of claim 21 in which the watermark decoder is operative to decode watermark data from audio data.

25. (New) The apparatus of claim 21 in which the watermark decoder is operative to decode watermark data from received video data.

26. (New) The apparatus of claim 21 in which said application comprises an email application.

27. (New) The apparatus of claim 21 in which said application comprises a phone application.